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Subtropical Gardening.

BY JAMES TAPLIN, SOUTH AMBOY, N. J.

MUCH has been written on this subject in Europe, and many plants tried for the purpose, with more or less success, which in a great measure depends on the season, which is proverbially uncertain, especially in England; but enough success has attended the trial of many fine foliaged plants previously generally grown in hothouses all the year, to vary the uniformity and monotony of large masses of flowering plants.

In this country, many hothouse plants are far more satisfactory in the open ground than under glass during the hot summer months, and grow with a vigor and rapidity unknown in the cold, dull climate of England. But here comparatively little advantage has been taken of those advantages; and the effort has been used in trying to have such plants as variegated geraniums make an equal display to those seen in English gardens. This I consider a mistake, the climate being so very different; that a real satisfactory flower-bed to last in full beauty for, say, three months would be seldom seen. With few exceptions, the extent of subtropical gardening here has been a few large masses of Coleus Verschaffeltii, the poorest varieties of Cannas and Caladium Esculentum; these are very well as a beginning, but variety is charming, and having such a large variety to choose from, we should make use of many others, which might be planted in large quantities in the splendid public parks without destroying the natural scenery, but rather adding the luxurious growth of the tropics to the tropical climate.

Some of your readers may make an objection to the expense of this style of gardening; but, after the first outlay, it is in reality less than keeping up a supply of flowering plants; and where large quantities are required to be stored, the space

FLORAL AVENUE AT PUTTERIDGEBURY, ENGLAND.

required in comparison to the size of plants is small, and many species can be stored better in a dry cellar just free from frost than in a greenhouse.

I will mention a few of the most showy and easily grown plants, such as may be termed everybody's plants.

First, I must place Cannas, of which we have now varieties with very handsome foliage and also large and very showy flowers. Some of the varieties, as Heliconifolia and Auguste Ferrier, will grow eight or more feet high, with large musci-like foliage, while Adele Levalloie will display its dazzling crimson flowers when but two feet high, while Tricolor gives us beautiful variegated foliage. These plants will grow in any rich soil in full sun or shade, but much better in former, and can be stored like potatoes in the winter.

Another fine plant is the Aralia Papyrifera. Its large palmata leaves are very striking. This grows as free as the Canna in rich soil, and may be laid by the roots in soil in the cellar, and planted out again in May.

The Phormium Tenax, or New Zealand Flax, is another very useful plant; also the beautiful, variegated variety of the above; but this is rather scarce and high-priced. These are best planted in a moist place, or supplied with abundance of water; and to be kept in a moderate light place in winter. A little frost will not hurt these.

The Acoræ Japonicæ Variegatæ is a very beautiful plant for edging beds or borders of other foliage plants, or for planting clumps or margins of ponds and lakes. It is most satisfactory in moist ground. This can remain in ground during winter; it is perfectly hardy.

Arundo Donax Versicolor is a magnificent plant for a large patch near water, the center of large beds, or the back of a border. It will grow ten feet high, and has a very light and graceful look, when its beautiful, variegated leaves are waved by the wind. This is said to be hardy; but I prefer taking it up and preserving it from hard frost. The tall stems can be cut down; it will push others from the bottom.

Many of the Solanums may be raised from seed and are ornamental; some for foliage, and others, as Ciliata, for the fruit.

The finest varieties of Caladiums are also very desirable for the above purpose. I planted out over twenty sorts, and most of them made large and beautiful colored leaves, many of them superior in color to the same kinds inside. Keep this, in winter, with Tuberose roots.

The Alternantheras are indispensable for hedgings, and the color of grandifolia and amabilis tricolor is very striking; but they require keeping during winter in a warm greenhouse.

Coleus are so well known that I need not say much in praise of them, and we have so many sorts, it is difficult to select, but as many of the rich colors indoors are not at all the same planted out, I will mention Verschaffeltii as best dark, and Princess Royal as best golden.

In a future article I will mention a few of the more rare ornamental plants which are very desirable for this purpose. In this I have confined myself to a few easily managed by any novice.

Horticulture and Landscape Gardening in England.

An Address, by P. T. Quinn, before the Rural Club of N. Y.

THE first view of the British Islands, as seen from the deck of a steamship, in the English channel, is strikingly beautiful and picturesque. The distant and green-clad hills of the county Wicklow, Ireland, and the bold, abrupt, and in places precipitous landscape of Wales, divisioned off into fields by the neatly trimmed hedges, is a pleasant and enjoyable picture, coming suddenly upon one, after a ten days' voyage, during which time little or nothing is seen, but sea and sky, with an occasional spout of the ever-welcome *whale*, to break into the monotony and lazy habits one falls into in crossing the Atlantic. But on approaching Liverpool through the Mersey, there follows a sad feeling of disappointment, with this muddy, sluggish, stream, flowing lazily along; as if without purpose, and confined on either side with tame and uninviting banks. One wonders that in a country with a world-wide fame for its cultivated tastes in embellishing its landscape, where gardening was taught and fostered, as one of the fine arts, as early as the sixteenth century, that so little has been done to adorn and beautify the banks of the river leading to the great shipping port of the world. But this disappointment soon vanishes when leaving the outskirts of this, the center of the shipping interest, for travel in whichever direction you may, the general appearance of the country is that of a well kept and highly cultivated garden, when compared with our own country, where fertile land is too plenty and too cheap to call for the same kind of close cropping. The total absence of the unsightly post and rail fences, and in their stead the thorn hedges, gives tone to the landscape, and adds much to the general appearance of the face of the country, that grows on one the more they see of it.

Another feature, common in England, Ireland and Scotland, and one well worthy of imitation in our own country, is the tasteful manner in which many of the railroad companies keep the enclosed spaces on either side of the tracks. The spare ground is laid down to grass, which is mowed twice a year, leaving a fine turf for hundreds of miles on a stretch. This, in connection with depots built of stone, from handsome designs, and the walls of such buildings not unfrequently hidden from sight, by the luxuriant growth of ivy, and other climbing vines, with a tastefully laid out flower garden near by—and often I have seen the name of the station, from the car window, in growing flowers of brilliant colors.

The natural advantages of the mild and moist English climate, make it comparatively easy work for the English gardener to produce and keep up a succession of fine effects. Among the most noticeable in all well kept gardens, parks, and pleasure grounds, is the exquisite fine character of the turf, looking in midsummer, fresh, green, closely shaved, soft, velvety and elastic to the foot. One who has not seen a well tended English lawn, cannot conceive how much it adds to the finish of a country home. In all country places having any pretensions, the "ribbon" style of arranging flowers is quite common; and where the plants have been set with a view to the harmony of colors, this style proves a great success. Then follows the plan of massing colors. Beds cut out in graceful and artistic shapes, planted with a single variety of flowers, or a bed of ornamental leaved plants. The geranium, golden

feather (*Pyrethrum*), dwarf nasturtium, mignonette, lobelia and coleus are often used for this purpose. While in some of the best kept places, long beds of dark blood-leaved beets were grown for ornamental purposes, and contiguous to other plants, one could hardly imagine they would harmonize and give such richness to the whole.

Window Gardening.

There is no doubt that the mass of the English people enjoy and cultivate flowers more generally than the Americans. This fact is demonstrated in the extent that "Window Gardening" is practiced in and about every village, town and city; among the poor, as well as the rich, are to be seen structures on the window sills, kept constantly filled with flowering and ornamental leaved plants through the whole season. In the more wealthy neighborhoods these window structures are elegant in the make and finish, and in places the whole front of a house would seem ablaze with bright colors and climbing vines. Through the mechanics' and laborers' quarters there would be a less gorgeous display; but even in the most wretched hovels, where the poor are compelled to live, it was quite common to see, in a back alley, on the sill of a window, four or five stories up, a single plant of geranium, or a pot of mignonette, that had been carefully tended by its owner. The demand is so large for this class of plants, that they are propagated by the million, and sold at very low rates, when compared with our prices for the same kind and quality of plants. Fuchsias, strong, stocky plants, for twelve cents apiece; geraniums, balsams, calceolarias, etc., etc., at from four to six cents, or one-sixth of what they would cost here. In London, propagators from the suburbs send thousands of these flowering plants, every morning, to Covent Garden market; from here they are distributed, by men, women and boys, to all parts of the city, each of whom has his own customers, and keeps them supplied with whatever kinds they may want, not only for window decorations, but also for garden culture.

Where there was such a demand for annuals, there must be some place where the seeds were grown in great quantity. A visit to the flower farm of Dunnett & Beale, at Dedham, Essex county, soon solved this inquiry. Here I saw more than 200 acres, exclusively devoted to raising flower seeds; and at the time of my visit, the bulk of the past season's crop was in full blossom, presenting a display well worth a trip across the Atlantic to see. This, however, is a mere skeleton of one branch of the commercial florist's business on the other side of the Atlantic.

Fine Plants.

A visit to the mammoth establishments of James Veitch & Son, Wm. Bull, E.G. Henderson & Co., Wm. Rollisson & Sons, R. A. Prance, George Jackman & Co., Wm. Paul, Thomas Rivers, and hundreds of others in the suburbs of London, one can see a choicer and very much more expensive class of plants, where the price of single specimens will range from $5 to $60 apiece, and plenty of demand for this class of stock. I saw in one of these establishments a dozen of large Azaleas sold for $60 apiece, to go to St. Petersburgh, for embellishing a banquet hall next season. In another, I saw fifty pot grape vines, in fruit, at $12 apiece, for a dinner party of a wealthy Londoner. Nor were these rare cases; for one familiar with plants need only examine the stock to judge of its value. The horticultural societies are far-sighted enough to offer

large money premiums for fine plants, and the exhibitions that I attended seemed to warrant this course. At the exhibition of the Royal Botanical Gardens, I saw more, and choicer plants shown by a single exhibitor, than I ever saw by one Society, including all exhibitors in this country. Just imagine Fuchsias six feet high, and four or five in diameter, completely covered with flowers; Erica Candolleana, six feet in diameter and three in height; Alamandia grandiflora, a mass of flowers; Pelargoniums, more than seven feet in diameter; also, John Waters & Sons' collection of Azaleas and Rhododendrons, the finest in the United Kingdom; in fact, these would make an attractive exhibition without further accession.

Roses.

In England the Rose seems to have attained perfection, and the demand is very large. In walking over the grounds with one nurseryman in the suburbs of London, he showed me his stock of forty acres of standard roses, and he assured me he was not one of the largest growers. At the rose show at Sydenham Palace, the cut roses were arranged in shallow boxes filled with moss, each box holding forty roses. These boxes were placed in a line, and this line extended just half a mile, and the large size of the roses was quite as surprising to me as that of the whole exhibition. Another and very interesting feature of this show, and one that I hope some day to see adopted by our own Societies, was that of offering liberal premiums for dressing breakfast, lunch and dinner tables with flowers. Here the tables in each class were set, ready for a meal, with the plants arranged by the competitors, which in this instance were about forty in number. For this purpose the different varieties of the Fern were arranged with graceful and pleasing effect. In fact, this part of the exhibition was more attractive to me than that of the roses.

The London Horticultural Society's exhibition was smaller than I had reason to suppose, from its standing and antiquity; still, the collection of Jackman's Clematis, in size, variety and brilliancy of colors, more than paid me for my visit. This, with the hospitable reception from the active members of this representative Society, will always be remembered by me with pleasure.

Gardening.

In what may be termed ornamental gardening, the English are far in advance of us, but in the more practical part we take the lead by at least twenty years. During my stay in England, I visited many of the largest and best-managed vegetable farms in the vicinity of London, and I was surprised to witness their primitive methods, both in their system of cropping and tedious way of doing the work. It is quite within bounds to say, that a man familiar with trucking in New Jersey, will do a third more work in a given time than a man in the same position in an English garden. The ordinary implements used by the latter are clumsy and unnecessarily heavy, and this weight has to be carried around at a considerable waste of strength both of men and animals. For instance, a common digging spade or fork will weigh at least twice as much as one of ours, intended for the same class of work. There is more weight of wood in an English garden cart than would make two or three of ours, and this seeming unnecessary weight will be found to run through the whole list of English farm implements.

Small Fruits.

Small fruits are grown on a large scale in the outskirts of London. At the fruit farm of Mr. F. Dancer, one of the most successful growers in the neighborhood of London, I had an excellent chance to study their methods. With raspberries, blackberries, currants and strawberries, our method of cultivating and yield would equal that of the best English growers. But with gooseberries the English are so much larger and so much more prolific, that I would not even think of drawing a comparison. I saw growing at Mr. F.'s farm, fifteen acres of gooseberries, without apparently a diseased leaf or berry. The heavy spring rains and late frosts destroyed the crop of apples and pears in England, so that I had no opportunity of seeing orchards in full bearing, and had to be content with drawing conclusions from the growth and foliage of the trees. But in Belgium and France, I examined many noted collections of these fruits, and I returned home with the firm and proud belief that with apples, pears and peaches we can beat the world, in size, quality and production.

Small Fruits for Family Use.

BY HENRY T. HARRIS.

IN a short time those who desire to put out new beds of small fruits must begin to make the necessary preparations.

We do not propose to give, in this article, any instruction as to the mode of planting, but will reserve that matter for the next number of THE HORTICULTURIST.

We wish to speak of those varieties of fruits which have been found, under all circumstances, to do well; at least south of Ohio, and in the West.

One great error which many persons fall into, is that of planting too many kinds. Another is, in buying a few plants of every new variety which is placed before the public with high-sounding names and many "certificates" of excellence.

The safer and wisest course to pursue is, to ascertain the names of two or three sorts, which experience has taught you to be good, and plant no other, unless you are an amateur cultivator, and desire to try experiments.

Strawberries.

I begin with the "same old story," and name first the immortal Wilson's Albany, because you simply cannot do without it. Large, beautiful in color and shape, a great bearer in all kinds of soil, and good enough for any palate, we would part with any other half dozen kinds rather than this. True, there are many others of finer flavor, but all things considered, we name the Wilson's Albany king of the strawberry realm.

Scarcely inferior to this, is the wonderful *Green Prolific*. My bed of twenty by thirty feet yielded, the second season, over thirty measured gallons. And such berries!

Then I name *Downer's Prolific*, a native of Kentucky, which gives a large general crop, earlier than any other known sort. A little too acid, some say, but crushed sugar in abundance, scattered through them a few hours before use, makes *that* point all right.

I close the strawberry list by naming the *Kentucky*, also a native of the State whose name it bears. It is not a prolific bearer, but the berries are so large and beautiful that I would be slow to discard it on account of its failure to bear so abundantly as its kinsman, *Downer's Prolific*.

Of course, there are many other kinds which are excellent in quality and fine bearers, but what we desire to impress upon the growers of small fruit is, to select a *few* of the best, and let the curious folks of the world experiment with the many kinds and the high-priced new varieties.

Raspberries.

Close upon the death of the strawberry crop steals the luscious raspberry. Many persons prefer this fine fruit to the other—we are not of that faith, however.

As before stated, in reference to the strawberry, we say don't plant too many varieties, but be sure to begin with the *Mammoth Cluster* (a variety which has several *synonyms*), and let us assure you that you will not regret it if you make this kind occupy at least one-half of all the space you can spare for the raspberry. Large, beautiful, and wonderfully prolific, you will stand amazed at its loads of splendid berries; which, for table use when fresh from the canes, and for winter use when canned, there is no other kind to equal it.

Next to this, of the black-caps, get the Doolittle and Davison's Thornless, in equal numbers, and you will have all you want of this color.

By no means fail to plant a goodly number of canes of the famous and abundant-bearing *Purple-Cane*. "Jam," made of this variety, is perfectly superb, and it bears enormous crops of fruit almost every year. A family can scarcely do without this delightful berry. Try a few canes of it, if you doubt the truth of what we have here asserted.

Many persons prefer the red varieties, and we believe that in the market this color sells, generally, for at least a third more than the black-caps. We name, for this kind, the *Hudson River Antwerp*, although in many soils and climates it does not succeed well; however, it is a magnificent berry.

We name, also, the *Clarke*, which is large and beautiful and of superb flavor.

The *Philadelphia*, although not strictly a red berry, but between a red and purple, is, in our opinion, and according to our observation and experience, the finest berry grown, of any color. The crops are enormous, the fruit very large, and the flavor fine. If we had to select two kinds only of the raspberry for culture, we should unhesitatingly choose the *Mammoth Cluster* and *Philadelphia*.

Currants.

The number of really good varieties of currants is short. There are many kinds, but when we select the *Red Dutch*, the line is fully drawn. Other kinds are larger, but then, we only need currants for jelly, principally, and this kind is amply sufficient.

In our next article, we shall attempt to give our mode of small-fruit culture.

Stanford, Ky.

Pear Notes.

BY E. SATTERTHWAITE.

I PROMISED to send you some pear notes, from observations made during the last two years. In a paper, read before the Pennsylvania Fruit Growers' Society, two years ago, and published, I believe, in THE HORTICULTURIST, I gave my experience with pears at considerable length. Since that time, I have not had occasion to modify, to any great extent, the views therein expressed, except in so far as the tendency to blight, which I have discovered in some varieties have materially lowered their value; and others, found comparatively exempt, have been correspondingly raised, in my estimation. Last year's experience, however, with pears, was so peculiar as to be worthy of particular notice. The extremes of weather, which prevailed during a great part of the year, having, in some way, had a remarkable effect on the pear crop, as well as on all other fruits. One thing most noticeable was, that many old sorts, long since condemned because of their liability to crack, were last year as fair and fine as could possibly be, not the least tendency to crack showing itself in any variety; even White Doyenne was perfect and fair as could be desired, and Glout Morceau, which has seldom before been good for anything here, from its disposition to crack, and other defects, was last year, about the finest and best crop of any in my grounds, among some five hundred varieties I had fruiting. Easter Beurre, also, which for some years has been utterly worthless, from a peculiar fungoid affection, was all right last year. These, and many other similar cases that might be mentioned, are such remarkable exceptions to the general rule, as to awaken a most interesting inquiry as to what peculiarity in the season could have produced such wonderful effects. Why was it that varieties of pears that have been uniformly cracked, or otherwise so defective as to be good for nothing for many years, were last year entirely free from defects of any kind, and as fine as could be desired? I do not feel qualified to throw any light on this question, but it is one certainly well worthy of investigation, for its solution could not fail to throw light upon some of the most embarrassing questions connected with pear culture. The extraordinary healthiness and abundance of other tree fruits last year could be, in great measure, ascribed to the comparative scarcity of curculio, and other fruit-depredating insects, but no insect (at least none that is apparent) has anything to do with these pear diseases. Whatever may have been the cause of this remarkable exemption from disease alluded to, it is not likely that it will be anything but temporary, and it would not be safe, as yet at least, to count on any permanent improvement in these varieties.

Though the season, last year, was such a remarkably healthy one for fruit products, it was not so for the trees. Owing to the extreme drouth, the growth of wood was poor, and blight prevailed to a much greater extent than I have ever known; in fact, with the exception of a few cases the previous year, I have never before noticed it in my grounds, without it may have been in a few instances which were ascribed to other causes. From many circumstances that have come under my notice, I am induced to believe that the generally accepted theory of Downing, that this disease is caused by the freezing of the sap in the unripened wood in the fall, can hardly be correct. If it were not for encountering the weight of such high authority, I should be inclined

to ascribe it to the effect of the intense heat of the sun in extremely hot days. I noticed in particular, last summer, after every hot spell, some of my trees were blighted, which before showed no signs of disease, and this continued until the last of the very hot weather, in September. It has occurred to me that "fire blight" may be nothing more than the burning or drying up of the wood from the immense evaporation going on from the foliage and all parts of the tree, under the intense heat of an unusually hot summer's sun—one of those days, for instance, when fruit lying on the ground, exposed to the sun, becomes baked, and tomatoes cooked on the vines. A number of such days we had last summer, and I always noticed, immediately after their occurrence, fresh victims of blight. The extreme drouth that prevailed in this neighborhood, nearly all the summer, would seem to favor this theory, for the drier the ground, the less chance a tree would have to obtain a sufficient quantity of moisture by its roots to supply the tremendous drain under the intense heat of such a sun.

Since I have been growing pears, we have never had a summer anything like as dry or as hot as last year was, and this is the first pear blight I have had of any consequence. Among many other incidents that led me to think that the disease could not have been in the trees from the previous autumn, I will just mention one: I planted a number of pear trees, received late in the spring from a northern nursery; all of these trees, of the kinds liable to blight, were more or less affected, in the localities on my grounds where blight prevailed, and in other localities were exempt. Now, how could that have happened, if the disease had been in the trees from the autumn previous, which, according to the Downing theory, it should have been? and, besides, I am certain, from having planted and pruned these trees with my own hands, they were entirely free from disease when planted. It may be asked why blight generally attacks certain portions and not others of the same grounds; this may be, that from some peculiarity in the soil, in those situations where blight prevails, the trees are not able to obtain as much moisture through their roots to supply the loss by evaporation, and consequently are unable to resist as great heat as those in more favored localities. I noticed, also, that the trees that blighted worst were not generally those that had made the rankest or late fall growth, as should be the case, according to Downing; also, that the worst sufferers were some that had not been manured for several years, and had made but little growth. The above views are thrown out merely by way of suggestion, nothing more; I consider the question as yet unsettled. One thing, however, seems pretty certain, that whatever the cause may be, it is, in a great measure, if not entirely, beyond our control, and that the only remedy within our reach is to find out the varieties that are the most exempt from the malady, and to plant only these. Fortunately, I think it will not be difficult to obtain a list of such varieties, embracing as great a number of sorts as is desirable, and extending throughout the season. It must be remembered, however, that varieties good in one place are not always good in another, and here is where the trouble comes in, as every locality must find out for itself what sorts will do best for it. I will, however, give, from the leading varieties, a list of those that I have found liable to blight, and also of those most exempt, which will probably be found to hold good generally:

Varieties, as blighting badly, I mention Madeleine, Dearborn's Seedling, Osband's Summer, Belle Lucrative, Louise Bonne de Jersey, Marie Louise, Beurre de Mont-

geron, Forelle, Urbaniste, Golden Beurre of Bilboa, Passe Colmar, Catillac, Glout Morceau, Vicar of Winkfield, Easter Beurre, and some others of lesser note. As not blighting at all, or very rarely, I would name Seckel, Lawrence, Duchesse d'Angouleme, Beurre d'Anjou, Buffum, Manning's Elizabeth, Early Catherine, Kingsessing, Rutter, Doyenne Boussock, Kirtland, Beurre Clairgeau, Beurre Bosc, Cushing, Dix, Ananas d'Ete, and many others not so generally known. There are also a number of valuable varieties that might be mentioned, liable somewhat to blight, but not enough to entirely condemn them, such as Howell, Bartlett, Doyenne d'Ete, Beurre Giffard, St. Michael Archange and Doyenne d'Alencon.

Jenkentown.

Home Gardening.

Andrew S. Fuller commends the following List in the *Rural New Yorker:*

Twelve Hardy Shrubs.

In this list I shall name the most hardy as well as beautiful.

Amygdalus pumila.—Double rose-colored almond; an old and well-known plant.

Amygdalus pumila alba.—Double white flowering almond.

Azaleas, nudiflora and *viscosa.*—Both natives of the Northern States, and scarcely surpassed by any exotic species.

Calycanthus floridus.—The well-known sweet-scented shrub. Flowers dark chocolate color.

Deutzia crenata plena.—Flowers double white, tinged with rose color; superb.

Deutzia gracilis.—A very small shrub, with long spikes of pure white flowers; a splendid plant for forcing in winters.

Forsythia viridissima.—Flowers yellow, produced very early in the spring, before the leaves.

Japan Quince (*Cydonia Japonica*).—Flowers large, deep scarlet; produced early in spring.

Prunus triloba.—A beautiful shrub, with double flowers of a deep pink color. It succeeds best when worked upon plum stocks.

Spiræa Reevesii.—Flowers pure white, in large clusters, appearing about the time the leaves are fully developed.

Viburnum opulus.—The well-known snowball; a shrub deserving a place in the most select list.

Weigela Hortensis nivea.—Flowers pure white, blooming in late spring.

A good selection of hardy shrubs should consist of not less than fifty species and varieties, and then the best of the old favorites, as well as a few of the new kinds, can be included.

Mr. Fuller also advises the following

Twelve Winter-Blooming Plants for Small Greenhouses.

Abutilon vexillarium elegans.—A half-climbing shrub, bearing a profusion of scarlet, orange, and pink flowers. There are also many other species and varieties, varying in size and color of flowers as well as habit of the plant, all desirable.

Azalea ovata alba.—Flowers pure white.

Azalea purpureæ plena.—Flowers double, deep crimson.

Bouvardias.—There are several varieties in cultivation which are indispensable. *B. leiantha* is a dazzling scarlet; *B. floribunda*, orange scarlet; *B. Hogarth*, rich scarlet, large racemes of flowers; *B. Davidsonii*, pure white; *B. Vreelandii*, similar to the last, but distinct.

Camellia fimbriata.—Flowers very large, edge of petals delicately fringed.

C. alba plena.—Old double white, but one of the best. These two are considered the most valuable for cut flowers; but the colored sorts are equally as beautiful, and one can scarcely go amiss in making a selection, as our florists propagate only the best, there being hundreds of varieties to select from. They all succeed best in rather a low temperature and partial shade.

Cuphea platycentra.—Small, slender, evergreen shrubs, extensively used for bedding out in summer, but far more valuable for its flowers in winter. Flowers small, scarlet, tipped with white; often called "Cigar plant."

Fuchsia serratifolia.—Flowers large, scarlet; leaves dark rich green and very large; an excellent early winter-blooming species.

Gardenia florida.—This single variety is the best for greenhouse culture. Flowers white; very showy.

Lagerstræmia Indica alba.—This is a variety of the well-known Crape Myrtle of the Southern States, where it usually blooms in autumn; but when cultivated in pots in the Northern States, it is one of our finest early winter-flowering shrubs. Flowers pure white and produced in great abundance.

Punica nana.—New dwarf pomegranate. Flowers beautiful orange-scarlet; very handsome.

Suggestions for Planting Home Grounds.

Amateurs should be educated to make their own selections of trees, and plant according to right principles. They must therefore learn, as well from *experience* and *observation*, as well as follow the advice of landscape gardeners or horticultural journals. At a recent meeting of the Jacksonville (Ill.) Horticultural Society, Dr. McFarland read a good report from the committee on trees and shrubbery, which contains much common sense advice. Evergreens should be planted not so much for immediate effect, as for future use and beauty. Space, sunlight and protection are their three absolute requirements, and any attempt to grow them to perfection in crowded groups, or in enclosures where grazing animals are ever allowed to roam at large, will be met with certain failure.

Rules for Selection, Planting and Care of Evergreens.

1st. Select the trees by personal examination in the nursery, and always those with single stems.

2d. Patronize your nearest reliable dealer.

3d. Plant in damp weather in the spring, with the least possible exposure of the roots to the sun and air. In his own experience the loss in fall-planted trees had been ten per cent.—in spring but two per cent.

4th. Prune all mutilated and broken roots; spare no pains in setting the tree; one minute's extra time given then more than equals a year's growth. To secure the best results, each tree should be allowed at least forty feet of unshaded greensward.

5th. Mulch for a year or two. In speaking of deciduous trees for street shading, he mentioned the white elm as first in beauty; the silver and soft maples were also highly recommended, and advocated the action of the town authorities in this matter the same as with sidewalks. The hockberry, tulip and coffee tree should be found in every lawn.

Prof. Turner also read a short paper, and to the point. For the street he considered the elm the king of shade trees. The soft maples are all of quick growth, but short lived, and apt to be broken down and deformed with ice and winds, and liable to be attacked by borers. The various varieties of the hard maple are also most magnificent trees, but in our county it is a slow grower, and so liable to a fatal blight from some unknown cause, that it is not reliable as a street tree. The sycamore is also a very hardy and reliable tree for the street, and it would add greatly to the beauty of our city if we could occasionally get out of "Elm street" and "Maple street," and ride a short distance in a street lined with a majestic row of sycamores on each side, with their broad, light green leaves, and pendant batten. An occasional street, too, lined with the Tyrolese larch, would be a still greater relief, though it furnishes less shade than either of those above mentioned. But for quickness of growth, beauty of form, spray and foliage, I know of no two trees that equal the American chestnut and the tulip tree. The fruit of the former is very valuable as well as the timber, but it succeeds well only on dry, mellow soil, and can be successfully transplanted only when small. The leaves of the tulip tree are, so far as known, perfectly free from all sorts of insects and blights. Every considerable house-yard in town ought to have one or more of these noble trees in it, instead of those interminable rows of soft maple. The weeping willow, Toplady poplar, and white birch were recommended for variety. There is no single tree that contrasts so beautifully and harmoniously with the common evergreens as the deciduous cypress. The balsam fir is quite fashionable, but the tree itself bears no comparison to the majestic Norway pine or the spruce. The black spruce of Maine was highly commended. All evergreens should be transplanted or have their roots cut every two or three years while in the nursery, to render them both safe and reliable for transplanting. All top-rooted trees, and especially the chestnut, need the same treatment. Evergreen hedges and screens are "a thing of beauty" and "a joy forever." Every one of the old cross fences between our city lots ought to be removed, and a beautiful evergreen hedge planted in their places. The hemlock, and the Siberian and American arbor vitæ are the best for this purpose. As to shrubs, said the Professor, properly so called, I have come to regard them as but little else than a nuisance everywhere. A few of them, well back, will do, and recommended the barberry, the Japan quince and the snowball. He did not favor the idea of crowding evergreens so closely about our dwellings as is the custom with people generally.

Plaster of Paris as a Manure for Vines.

A correspondent of *The Garden* says he had a large quantity of grape vines planted in the open ground, and trained on poles and wires along the gravel walks. "In planting these, I had the holes dug about twenty-five inches deep; I then threw into each hole five or six lumps of old plaster, about the size of my fist; I

threw a little earth over the lumps, and then planted the vines in the usual way. The result has been wonderful; the vines, which were not half an inch thick when planted three years ago, are now two inches and more in diameter, and bear finely. The grapes are also freer from disease. Other vines, not so treated, are much smaller and produce less, the fruit being also more liable to disease. To try the effect of this plaster, in planting two American black walnuts, we put the plaster to the one and not to the other. The former grew twice as fast as the other. Last year we dug about the roots of the one to which no plaster was put, and we threw in seven or eight large lumps of plaster among the roots; the trees are now both of the same size, and though only four years old, are sixteen to seventeen feet high."

Killing Trees with Salt.

Dr. Kedzie, of the Michigan Agricultural College, speaking of how salt is taken up in the circulation of trees, relates a case of its fatal effects that came under his own observation. On the college grounds formerly grew a fine vigorous specimen of common sassafras (*Sassafras officinale*), apparently in perfect health. A quantity of strong brine was inadvertently thrown beneath this tree, forming a stagnant pool in its immediate vicinity. In a very short time the tree began to manifest signs of decreasing vitality. The salt was absorbed unchanged in such immense quantities that, entering the circulation, it effloresced upon the surface of the leaf, in white crystalline deposits, after which the tree grew rapidly feebler and died.

Fruit Trees as Ornaments.

Why can we not introduce them more freely on our lawns for ornamental purposes? A writer in the English *Journal of Horticulture* thinks that there are few objects more beautiful and interesting during the spring or early summer months, than our common cultivated fruit trees, and there really does not appear to be any good reason why the fruit garden should not constitute a necessary portion of the policy or pleasure grounds of every country mansion. What can be more beautiful than the apple tree, the pear the plum, and the cherry tree, in full flower? And they are in fact exceedingly interesting objects at all seasons. But it rarely happens that they are placed in a position where their beauty can be appreciated and enjoyed. They are too frequently found in the vegetable garden, where they are entirely out of place, unless it be in the form of espaliers or cordons; or they may possibly be found in a somewhat neglected and out-of-the-way locality known as the orchard.

But as an advance or improvement upon this state of things, might not these useful and ornamental trees be cultivated with more pleasure, and at least equal profit, in a tastefully designed garden or compartment by themselves, and forming at the same time an essential part of the pleasure grounds? Clumps or groups of varied forms and dimensions could be formed of pyramidal or otherwise trained apple, pear, plum, and cherry trees, etc., which might be margined by low slender cordons of their respective kinds; while single standard trees of various sorts might, in suitable situations, be allowed to assume their natural habits and dimensions, the whole area to be traversed by winding and comfortable walks, to afford every facility for the examination and enjoyment of the beauty of the various fruits in all stages of their development.

A Few Choice Flowers.

BY HENRY T. HARRIS, STANFORD, KY.

Come, gentle Spring, ethereal mildness, come!
And, from the bosom of yon drooping cloud,
Veiled in a shower of shadowy roses,
On our plains descend.—*Thompson.*

HOW many hearts are longing for her coming? How many hearts grow warm at the first bright sunbeams that flood the earth, telling of her near approach? And why? Because in her lap comes the lovely flowers. First, the violet, peeping from a snow-drift on the sunny side of some old log in the woodland! Then, nearer home, the old daffodil or jonquil, and others of the days when grandmother's garden looked so charming by the presence of the early and simple flowers. Who would fail to plant them, if only for the reason that grandmother did so, and loved them too with as much affection as our modern florists love the gaudy roses or camellias of the greenhouse.

But this is a digression from the subject before us. All of us cannot have greenhouses or conservatories. Some of our readers are poor, and must content themselves with a few hardy flowers which grow from seed plants, in early spring, upon some warm border, and many of these are truly lovely. Some of them bloom for many weeks, and a succession can be had with only a mite of daily or weekly care.

We propose to name a few of the more simple ones, in order, if possible, to help some lover of these "earth-angels" (as some one has well termed them) in selecting those which they can afford to care for.

First, then, let us name the wild-wood violet. Gather a few bunches of the white and purple from the woods before the buds open, and with plenty of their native soil, transfer them to a warm spot on your border in front of the door, and you will be amply rewarded.

The daffodil should always find a place on the border. The Pyrus Japonica, or Japan quince, a thorny shrub, slow of growth, but beautiful in its pink and crimson glory when grown, gives a magnificent display in early spring. The Phlox is always beautiful and desirable. There are several kinds. The hardy tulip, the many-hued gladioli, the many kinds of lilies—all of which are now cheap—will give increased and increasing loveliness to the yard of the millionaire, or the doorway of the humble mechanic, who comes home after the toil of the day is done, to sit under his pleasant roof with his little prattlers, and with Mary, the eldest, whose busy hands have found time to plant and nurse those lovely things.

A few hardy roses, in variety, can be had for a mere pittance. There are many other kinds just as beautiful and desirable as the above, but we name these only to give a hint to those who may desire to plant a few when the spring-time opens.

Do not neglect it. Do not cramp yourselves down between walls all your lives, while God's most beautiful creations are to be had at such trifling cost.

Horticulture in the Northwest—Action of State Societies.

BY OBSERVER.

THE rapid and marked progress of horticulture in the Northwest, for the last ten years, is worthy of special note. Neither is it confined to isolated localities, favored situations, or peculiar tact of certain persons. The entire country has been alive with enthusiasm in the cause of tree planting. To one who has not been a close and constant observer of these things, the story of progress made would hardly

seem creditable. The failures of early settlers is not to be wondered at, when we remember that Minnesota and Wisconsin were mainly settled by emigration from Ohio and New York; and the eagerness with which these parties called for and planted the good old Spitzenberg, Rhode Island Greening, Baldwins, and other eastern varieties. And to this day, many there are who will yet call for these, and feel aggrieved because they find them not, and almost doubt the honesty of nurserymen when assured of the worthlessness of these for this climate.

But happily we have been traveling in the right direction. Upon the verge of despondency, but eager for fruit, the anxious inquirer took to the crab varieties, as better than nothing. These succeeded, grew and fruited finely. This was a start in the right direction. Taste and desire enlarged, and knowledge increased. The first lesson learned from this was, that we must seek hardiness—quality and quantity even to be added afterwards. Varieties were selected upon this principle, and from it more knowledge as to treatment of varieties in general. The late meeting of the Minnesota State Horticultural Society developed such a state of progress in that State, as was little looked for. At this meeting, held January 14 to 17, there was a very fine display of fruit, many exhibitors placing twenty or more varieties on the tables; and these included many sorts usually considered tender, but by the experience of years in selection of location, they were a success. The experience of all was well told, and the merits of varieties well discussed. It was not thought advisable to recommend a large list for general planting; better a few well tried certain sorts—with these growing satisfactory, the list on every farm would be rapidly increased. The society unanimously recommended, for general planting—early, Tetofsky and Duchess of Oldenburg: fall, Fameuse, Haas and Plumb's Cider; winter, Ben Davis; for trial, Red Astrachan, St. Lawrence, Autumn Strawberry, Saxton, Price's Sweet, Talman Sweet, Golden Russet and Romanite; pears, Flemish Beauty. The annual address was delivered by Philip S. Harris, of the Land Department of the Lake Superior & Mississippi Railroad. This was a masterly effort. In good plain English, without any attempt of the spread eagle, Mr. H. set forth the merits and claims of Minnesota.

Passing from this meeting, we come to Wisconsin's annual gathering, held at Madison, February 4 to 7. This meeting was unusually well attended. The fruit display was not as large as that of Minnesota, and was made up mostly of new varieties, which promised special merit, or seedlings. In this collection was the Pewaukee, which promises to be a very valuable acquisition to the West, and to take the place of the Rhode Island Greening at the East. It is a seedling of the Duchess of Oldenburg, which it resembles very closely in tree, an enormous bearer, and following in season the Fameuse—supplies a place before deficient. The Ben Davis, fair as the fairest, was on the table, more beautiful than ever. This variety is being called for very extensively throughout the West, on account of its hardiness in both nursery and orchard, abundant bearing qualities; and the very fine appearance and late keeping qualities commands for it a ready market.

There was also a good display of grapes. A good deal of attention is now being paid to the cultivation of the grape, and many are succeeding very well in keeping them till mid winter, when the fruit is in demand at remunerative prices.

There were a large number of very practical papers read. The fruit and tree lists were thoroughly revised, and the following lists presented to the public as the result of the deliberations of those present:

Apples.

For General Culture—Red Astrachan, Duchess of Oldenburg, St. Lawrence, Fameuse, Utter's, Plumb's Cider, Westfield, Seek-no-Further, Talman Sweet, Golden Russet, Willow Twig.

Commercial List—Red Astrachan, Utter's, Fameuse, Pewaukee, Ben Davis, Walbridge, Willow Twig.

Amateur List—Tetofski, Early Joe, Sweet June, Sops of Wine, Fall Stripe, Autumn Strawberry, Fall Orange, Bailey Sweet, Fall Wine Sap, Blue Pearmain, Rawle's Janet.

Hardiest Apples—Tetofski, Duchess of Oldenburg, Haas, Fameuse, Plumb's Cider, Ben Davis.

Pears.

For Continued Trial—Flemish Beauty, Ananas d' Etc, Early Bergamot, Bartlett, Swan's Orange, Seckel, Winter Nellis.

Grapes.

Delaware, Concord, Lindley (Roger's No. 9), Agawam (Roger's No. 15), Salem (Roger's No. 22), Wilder (Roger's No. 4), Janesville, Worden, Eumelan.

Plums.

For Continued Trial—Lombard, Imperial Gage, Hinkley (or Miner), Red Egg, Yellow Egg, Eldridge.

Strawberries.

For General Culture—Wilson's Albany.

Family and Near Market—Green Prolific.

For Continued Trial—Peck's Emperor, Charles Downing, Reed's Late Pine, Victory, Burr's New Pine, Boyden's No. 30 and Arena.

Raspberries.

For General Culture—Philadelphia, Davison's Thornless, Mammoth Cluster.

Evergreens.

For General Planting—Norway Spruce, White Pine, American Arbor Vitæ, Scotch Pine.

Ornamental Planting—Austrian Pine, Balsam Fir, Siberian Arbor Vitæ, Hemlock.

Trees for Timber Planting—European Larch, Green Ash.

Pears.

The culture of pears was very thoroughly discussed, and much conflicting testimony was given. The following resolution expresses the sense of those present:

Resolved, That we recommend the planting of pears upon high, airy locations in well drained soils of only medium richness or those decidedly lean, with culture enough to secure a fair but not excessive growth. That if soils are excessively rich, their growth should be checked by root-pruning in summer, or grassing the surface adjacent.

The election of officers resulted in the re-election of most of the old officers, Geo. E. Morrow taking the place of Mr. Willey as recording secretary. Of Mr. Willey's fitness, and labors in the past, the *Western Farmer* says:

"The late recording secretary, O. S. Willey, of Madison, declined a re-election to the position he has held since 1866. Mr. Willey has done a large amount of work for the society, more than most persons would have been willing to have done for the merely nominal pay he has received. We have had good opportunities for knowing how he performed his work, and we believe that the society owes much of the success of its meetings, of late years, to his energy and diligence. In recognition of his services, the following appropriate resolution was unanimously adopted:

"*Resolved*, That this society, recognizing the eminent services of Mr. O. S. Willey in the past, and that our present position is due, in a great measure, to his efforts in its behalf, do hereby tender to him our thanks, and that as a partial recompense we hereby elect and constitute him a life member of this organization."

THE WESTERN HORTICULTURIST
MARK MILLER EDITOR DES MOINES, IOWA

The Mechanical Structure of Plants.

BY J. COCHRANE, HAVANA, ILL.

[CONTINUED.]

IN the above enumeration we first notice a unity of purpose under a variety of expedients. Nothing can be more single than the design, more diversified than the means. Pefficles, shells, pulps, pods, husks, skins, scales armed with thorns, are all mechanically employed for the same end. Secondly we may observe, that in all these cases the purpose is fulfilled within a just and limited degree. We can perceive that if the seeds of plants were more strongly guarded than they are, their greater security would interfere with other uses, many species of animals would perish if they could not obtain access to them. Here, as in many cases, a balance is to be maintained between opposite uses. The provision for the preservation of seeds, appears to be directed chiefly against the inconstancy of the elements, and the inclement season. The depredations of animals and the injuries of accidental violence, seem to be provided against by the abundance of the increase.

When nature has perfected her seeds, her next care is to disperse them. The seed cannot fulfill its ends while it remains in the capsule. After the seed ripens, the pericarpium opens to let them out, which is according to rule in each species of plant. Some are opened by the action of the frost, some by elastic explosion, throwing the seeds to a distance. Those of most composite flowers are endowed with downy appendages, by which they float in the air, and are carried to great distances. We are compelled to omit to notice the store of nutriment laid up in the seed for the nutriment of the young plant. A striking analogy exists between seeds and eggs of animals; the same point is provided for in the same manner. The white, and that only, is used in the formation of the chicken. The yolk, very little altered or diminished, is wrapped up in the abdomen of the young bird, to serve for its nourishment till it has learned to pick its own food. We give the most common as illustrations because of their being the most forcible.

Our second observation on the mechanical structure of plants, is upon the general property of climbers. In these, plants from each joint issue close to each other, two shoots, one bearing the flower and fruit, and the other drawn out to a tapering spiral tendril, that attaches to anything within its reach, considering that two purposes are to be provided, for the fruitage of the plant and the sustentation of the stalk. No means could be more mechanical than this arrangement presents to the eye. "We do not see," says a noted author, "so much as one tree, shrub or herb,

that hath a stiff, strong, stem, that is able to mount up and stand alone without assistance furnished with these tendrils." We make a single, simple comparison, the pea and the bean, and remark that in the pea they do not make their appearance till the plant has grown to a height to need support.

The hollow stems of canes, straws and grasses, give the greatest possible amount of strength and elasticity for the amount of material used. Joints at stated distances in these tubes are another element of strength without increase of weight, the material being slightly different. With what uniformity and care has nature provided for these stalks of grasses, grains, and canes, by covering each with an impenetrable coat of weather proof varnish.

Grasses seem to be nature's especial care. With these she carpets her green earth and paints the landscape; with these she feeds the human family, the birds of the air, beasts of the field, and the grub beneath the surface. Cattle feed upon the leaves, birds upon the smaller seeds, many insects upon their roots, and none need be told that corn, wheat, rye, etc., etc., are strictly grasses.

Corn is a monœcious panicious grass, and though the great staple of the west, it seems to be overlooked in its botanical and mechanical constructure by intelligent growers. Our bread producing plants are grasses. Those families of plants known as grasses, exhibit extraordinary means and powers of increase, hardiness, and an almost unconquerable disposition to spread their faculties for recuperation coincide with the intention of nature concerning them. They thrive under a treatment by which other plants are destroyed. The more their leaves are consumed, the more their roots increase. Many seemingly dry and dead leaves of grasses revive and renew their verdure in spring. In lofty mountains and cold latitudes where the summer heats are not sufficient to ripen their seeds, grasses abound which are able to propagate themselves without seed. The number of the mechanical adjustments are so numerous, we must content ourselves as before remarked with a reference to the more common and marked instances. Parasitical plants furnish marked illustrations. The *Cuscuta Europea* is of this class. The seed opens and puts forth a little spiral body which does *not* seek the earth to take root, but climbs spirally from right to left upon other plants from which it draws its nourishment. The little spiral body proceeding from the seed is to be compared with the fibres, the seeds send out in ordinary cases. They are straight, this is spiral. They shoot downwards, this shoots upwards. In the rule, and in the exception, we equally perceive the design.

A better known parasitical plant is the mistletoe. We have to remark in it a singular instance of "compensation." No art hath yet made those plants root in the earth. Here, then, might seem to be a mortal defect in their constitution. Let us examine how this defect is made up to them. The seeds are endued with an adhesive quality so tenacious, that they adhere to the surface or bark of any tree, however smooth. Roots springing from these seeds insinuate their fibres into the woody substance of the tree from which this parasite draws its life and maintenance. Another marked instance of rare mechanical action is in the Autumnal Crocus (*Cholcicum autumnale*). How I have sympathized with this poor plant. Its blossom rises out of the ground in the most forlorn condition possible, without a sheath, calyx,

or cap to protect it, and that, too, not in the spring to be visited by the summer sun, but under all the disadvantages of declining year. When we come to look more closely at its mechanical organism, we find that, instead of being neglected, nature has gone out of her way to provide for its security, and make up for all its defects. The seed vessel which, in other plants, is situated within the cup of the flower, or just beneath it, in this plant is buried ten or twelve inches under ground, in a bulbous root. The styles always reach the seed vessel, but in this by an elongation unknown in other plants. All these singularities contribute to one end. As this plant blossoms late in the year, and would not have time to ripen its seeds before the access of winter would destroy them, Providence has contrived its structure such that this important office may be performed at a depth in the earth out of reach of the effects of ordinary frosts. In the autumn nothing is done above the ground but the blooming and fertilization. The maturation of the impregnated seed, which in other plants proceeds within the capsule exposed with the rest of the flower to the open air, is here carried on during the winter within the earth below the reach of ordinary frost. Here a new difficulty must be overcome. The seeds, though perfected, are known not to vegetate at this depth in the earth. The seeds, therefore, though so safey lodged through the winter, would after all be lost to the purpose to which all seeds are intended. To overcome this difficulty, another admirable provision is made to raise them above the surface, and show them at a proper distance. In the spring the germ grows up upon a fruit-stalk accompanied with canes. The seeds now, in common with those of other plants, have the benefit of summer, and are sown upon the surface.

"How great and marvelous are His works," and how carefully are the minute details of all His creatures, animate and inanimate, provided for. Relation of parts one to another is and must be harmonious in mechanics, so in the animal economy, so in the vegetable world. None of the works of the Deity want these harmonious relations of parts and offices.

Cultivation of the Almond.

AT a meeting of the Sacramento (Cal.) Farmers' Club, a member said that, as regards soil, the almond will succeed on almost any soil we have. It will succeed on drier soil than any other tree, if it is on its own root, and if on a peach root it will succeed where it is too dry for the peach itself. He considered the Languedoc the only variety that is worthy of cultivation. We have many kinds of seedlings, but he had never seen any one that will compare with this variety. The paper-shell almond is comparatively worthless. The tree is scrubby, ugly and crooked, to begin with. Then it is not very prolific, and not only that, but the nuts are so soft-shelled that the birds destroy them all. There are risks in growing almonds in this valley because of the spring frosts. There is less risk on the high lands than on the low lands; in fact, he thought, there was very little risk on high lands. The tree is not more liable than any other tree to be injured by excessive water. They will stand more exposure, either wet or dry, than the peach tree. The raising of the nut is very profitable, and is destined to become a matter of importance in this State.

Why not have a Greenhouse?

ED. WESTERN HORTICULTURIST: To a large majority of people a greenhouse is a charming place; at least so we may judge from the admiring exclamations that escape their lips on entering one. There is something so attractive in the appearance of growing plants, and the opening and full-blown flowers, that will draw the attention of all passing by. Especially is this true during the winter season, when the contrast is so strong between the living plants within and the dreariness without. Many desire to keep plants through the winter—more than can be accommodated in the limited space of the sitting-room window; in fact, they would like to have a small greenhouse, or a conservatory, only they imagine that such an institution would be very expensive, difficult to manage, and require the help of a trained gardener.

There is a large class who could enjoy such a place, and could afford it, too, if they did not suppose the difficulties too great. To such I would say that it is *not* so hard a matter to care for a small greenhouse; there are no *great* mysteries connected with the art of propagating and growing plants, but what any one, possessing an ardent love for such, can soon learn, and know how to serve their varied wants. It is easy enough to learn how to propagate from cuttings, but the operation requires constant attention. It is not necessary to spend a term under skilled workmen, but reading and practice will teach; only the beginner will be apt to make many and sometimes costly mistakes; but experience is a good instructor. About every household there are generally men enough, or stout boys, to do the rough work of a greenhouse—bringing in fuel, clearing the furnace, keeping up fires at night, or doing anything else needed. The firing at night would not be troublesome, for with a brick furnace of sufficient capacity, enough coal can be put in at bedtime to last through the coldest nights, even when the mercury goes down to 28 deg. below zero, as it did out here the past winter. And then, as to the daily attention required by the plants—the watering, repotting, training, propagating, etc., that work could be easily enough attended to by the feminine portion of the family. In fact, I know of no more pleasant or healthier occupation for a woman (or man either), than working daily in a greenhouse, with its bright sunshine, genial temperature, and cheerful surroundings of beautiful plants and fragrant flowers. I regard it as a grand opening for those women who are sighing for "enlarged spheres of usefulness," outside of the usual routine of household duties, or other feminine occupations.

Women can perform the duties required in growing plants in a greenhouse, whether for her own enjoyment or for profit. I know this to be so, for I have seen a stock of plants brought through winter, by a lady, and be in as fine and healthy condition as could be desired. Among plants woman can display her fine natural taste for arranging and selecting the most desirable kinds, and showing them off to the best advantage. The fine lady, with her large conservatory and paid gardener, need not condescend to look after the management, but to all who cannot afford such a luxury, and yet long for plants and flowers through all the year, I would say, build you a little greenhouse and learn to take care of it yourself, and you will find it the source of the greatest delight and purest enjoyment that it is possible to conceive of.

Des Moines, Iowa. ..... R. L. BLAIR.

Rooting the Carnation.

ED. WESTERN HORTICULTURIST: In the March number of THE HORTICULTURIST I see the following query: "What is the matter with my Carnation cuttings?"

Now, Mr. Editor, I have asked the same question of old florists and gardeners, and have received the same answer, in substance. No trouble in rooting the Carnation, they tell me. Just cut off the tops of the young shoots, and put them in the sand of the cutting bench, and a very large per cent of them strike root. I did so, and after they had remained there long enough, they turned yellow and died. At last I made the acquaintance of a gentleman who had retired from the florist's trade, and I asked him if he could tell me how to root the Carnation. Said he, I could show you better than I can tell you, had I a cutting. I brought him a cutting from the nearest greenhouse, and he proceeded as follows:

Be careful not to have the cutting too *soft*, nor yet too *hard;* there is a medium between the two that is just right. Cut the stalk from an eighth to a quarter of an inch below the joint; then take hold of the leaves, one at a time, that are nearest the cut, and pull them off—being careful, in doing so, that the bark is removed from the *joint*. If the leaf breaks, without removing the bark, take a sharp knife and peel it. It is not necessary that both leaves shall be pulled of. If the cutting is small, it would be better to peel only one side.

After I received the above information, we put in 2,500 cuttings, and a large per cent of them rooted. The bark of the Carnation is impervious to moisture, and as the roots seldom start, except at the joints, it becomes necessary to remove the outside cutting. Splitting the cutting through the joint has the same effect; also, cutting the stalk diagonally through the joint. If the cutting is small, I think the best way is to peel one side; if large, either of the above will prove satisfactory.

Now this is all simple enough to the initiated; but such information as is given by Mr. Cochrane, is throwing darkness rather than light. If "Propagator" has tried the above methods, and failed, I think the failure due to the "peculiar combination in the elements in which his cuttings are placed."

Northboro, Mass. JOHN F. JOHNSON.

NEW PLAN FOR DOUBLE WORKING PEAR GRAFTS.—Mr. P. H. Parker of Bastrop, La., writes to the *Southern Farm and Home* that he is successfully practicing a new mode for double working such varieties of pears as are difficult to graft on the quince. He takes the reluctant variety, whatever it may be, grafts it on some other pear—the Bartlett for instance—then cuts the latter from its parent tree and grafts *that* upon the quince. Growth in both cions follows at once, he claims, and he gains at least a year's time by it. He says also that this method improves the habits of some straggling varieties—the Rostiezer for instance—and that the Seckel, double worked on the Bartlett, will grow much faster than when grafted directly on the quince. He has practiced this for twelve years, he says, and now first makes it public.

Photographs and Fruits.

FROM Gov. R. W. Furnas, of Nebraska, we have three very fine photographic plates. One represents the buildings upon the fair grounds of the State Agricultural Society; the other two, from different stand-points, the display of fruit made by the State Horticultural Society in connection with the last (1872) fair of the State Agricultural Society. If these photographic views tell the truth, the display of fruit must have been magnificent on the occasion. We expect to see Nebraska at the "Hub," next September, with a collection of Pomona's gifts that will astonish the natives.

S. R. Moore, West Zanesville, Ohio, favors us with specimens of a small apple labelled "Little Pearmain," according to Elliott a synonym of Bullock's Pippin. Warder and Downing make it a synonym of the American Golden Russett. The apple is small, but has decidedly redeeming qualities. In describing it, we can do no better than to copy from Elliott:

"Size, small to medium; form, roundish, ovate, tapering much toward the eye; color, generally rich golden yellow, overspread with soft russett, and in sun a marbling of red; stem, slender; cavity narrow, regular; calyx, small, closed; basin, shallow, sometimes furrowed; flesh yellowish, tender, juicy, almost buttery, delicate, sprightly; core, large for size of fruit; seeds, full, ovate, pyramidal. Season, December to March."

Downing truly says of its quality: "One of the most delicious and tender apples, the flesh resembling more in texture that of a buttery pear, than of an ordinary apple."

The White Grub.

ED. WESTERN HORTICULTURIST:—Seeing an inquiry in the 12th No. of the HORTICULTURIST, in regard to White Grubs, reminded me of a bit of experience in my own observations of the pests, which I now give for the benefit of the inquirer or others.

Some three years ago, I planted a row of Early Rose potatoes, and wishing to make the most of them, about the time the sprouts were coming through the ground, I made a trench five or six inches deep close along the row, and put in it a liberal quantity—say two or three inches—of fresh hen manure, and covered it with soil. Sometime during the summer, while hoeing the potatoes, I happened to dig into the manure, and to my surprise found some twenty large, plump, white specimens of the "rascal" luxuriating in the trench of manure, while the potatoes, at digging, were unharmed.

Further: the fact is patent to all farmers here, that the white grub will not injure growing corn, if the ground has a good coat of fresh stable manure plowed under before planting. They seem to prefer to work in the manure, and perhaps live on it. Cannot this fact be turned to good account by furnishing the "rascals" such material underground among strawberry or other plants?

Carthage, Ind. THOMAS T. NEWBY.

Grafting the Grape on its Laterals.

ED. WESTERN HORTICULTURIST: Your method of grafting the vine as described in the *Pomologist* some months ago, is correct in accordance with my experience, but I have improved a little on that. I find it unnecessary to graft at the root of the vine and often inexpedient, but more successful to graft the side branches or laterals of the vine. Two years ago I laid down two wild vines sixty feet in length each, buried them in a trench ten inches deep, brought up their side branches above ground suitable distances apart for grafting. I then set fifty Iona grafts on those branches just below the surface of the ground. Every graft lived and has made strong, healthy vines. I left five of the branches until the 20th of July, and then grafted with Delawares. Two of them failed to grow, the other three grew and made about as much growth as the Iona vines that were set early in the spring. Vines can be propagated in this way with as much certainty as by layering. I have found that cions of the Delaware do not take so well on the Clinton as they do on the Wild or Taylor's Buttit. I have not tried grafting on the Concord; Salem Iona, and Allen's Hybrid, take well on the Clinton. I presume Concord stocks would be equally good. The main object is to have hard, healthy roots for stocks. I have found very little difference in the different modes of setting the grafts.

Freeport, Ill. P. MANNY.

P. S.—I am reported in some of the papers to have said at the meeting of the Northern Illinois Horticultural Society, at Freeport, that June was the best time to graft the grape. I said no such thing, but directly the reverse of that. I find early spring the best time, and that as the season advanced, the chances of success diminished. After the 20th of June, I found it too uncertain, though some will live. I once set a few cions the 20th of July, only about one-half grew. I used old wood of the previous year's growth. I at the same time set a few cions cut from the same season's growth with better success.

Picquet's Late Peach.

THE *Rural Alabamian* highly extols this peach for the South. Says: "It is the evidence of all who have fruited it, that it has no compeer. Large to very large, bright yellow, and of the most excellent quality, it cannot fail to become one of our most profitable market peaches, ripening as it does when good peaches are scarce, and the trees being fine growers and abundant bearers. Season, first half of September; freestone.

"This magnificent peach originated in the orchard of Antoine Picquet, Bel-Air, Georgia. In 1858 we cut the grafts from the original tree, which died the following year. After fruiting it for four consecutive seasons, we put it in the trade, feeling assured at that time that it was destined to become a most valuable market peach. In this we have not been disappointed, and it is a source of congratulation to us to have added this peach to our list of superior fruits and saved it from destruction. It ripens with the *Smock*, to which it is immensely superior in size, appearance and quality. The *Salway* also matures at the same time, but is also inferior to the Picquets, from a limited experience in fruiting the former and from reports of others who fruited both varieties side by side."

Do Apples Reproduce their Like?

ED. WESTERN HORTICULTURIST: Do apples ever reproduce the identical same fruit from seeds, is a question often asked, some asserting they do, others denying. That they do occasionally reproduce the same fruit from seeds, an exactness in all parts, is a fact I have seen more than once. Whilst at home with my father, he set twenty-five trees, all from seed of the Milan apple, and all came true to the parent tree, in tree, fruit and time of ripening; and last year had a seedling cherry crab to come into bearing a complete representative of the parent; but such, I admit, is not often the case, not even bearing a resemblance in tree. We have young trees grown from crab seed, some are crab in tree, others apple; and others grown from carefully selected apple seeds; that perfect apple and perfect crab trees are found in same lot, showing a variation from the parent in tree, as well as in fruit, is possible. The seeds of the apple and crab all grew close together, and the trees, as far as they have borne, show crab fruit on all trees showing crab, and sorry to say on nearly all the balance, though a little improved in size and flavor over the fruit of any of the regular crab trees, and indeed over any crabs we have yet grown, but none a really good eating apple. Have some hundred more fine seedlings to come in yet, on which will report from time to time.

Excelsior, Minnesota. PETER M. GIDEON.

N. B.—Would add, pears dead or badly damaged, and all varieties of the apple hurt, more or less; but few apples this season. Grapes not covered, all dead, the smaller fruits generally sound, I think, owing perhaps to the great depth of early snow-fall. The winter was cold, beyond any precedent known to oldest settlers, the snow not all gone yet—three feet of ice on the lake, March 30.

Manure for the Grape.

THE following, taken from a work on Manuring the Vineyard, is good advice. We are of the opinion that the application of a compost thus made, will benefit a vineyard, however rich or poor the soil may be.

"It is neither desirable nor necessary to impart to the vine too much luxuriousness. As a general thing, not enough importance is attached to a rational method of manuring, often required to assist the growth of the vine, though an excessive system of manuring will delay the ripening of the grapes, and impair the quality and quantity of wine produced.

"It is very important that the manure used should not only furnish to the vine nourishment, but also impart to it warmth. Further, no manure should be used which assists the growth of the wood, but which does not promote the yield of the wine.

"Fresh animal manure is not suitable for vineyards, as it contains too much nitrogenous nourishment of excessive richness. It is therefore advisable to mix with it masses of ground, for the purpose of properly dividing the manure. Good ground is mixed with animal manure, horn shavings, ashes, bones, sawdust, dry leaves, muck, etc., in heaps, which must be moistened frequently with water, etc., and frequently stirred or mixed together."

Editorial Notes.

A New Departure Needed.

Mutterings of discontent have reached us in various ways from many members of the American Pomological Society, respecting its Secretaryship.

Probably at its coming session next fall, no question will be considered with more anxiety than this, and upon its solution will largely depend the future success of the Society, and harmony be preserved among the leading pomologists of the country.

The present Secretary has committed an unpardonable blunder, one deeply deplored by the other leading officers of the Society, and has placed himself in a position calculated to draw out much determined and persistent opposition.

For the past two or more years, flattered with pride of place, and an egotistical estimate of his long years of experience in fruits and pomological matters, he has run a free gauntlet with pen and speech, criticising whom he pleased (sometimes most unnecessarily, perhaps even scurrilously, without just cause), and not in the least cautious in the use of uncomplimentary allusions to many of the most influential of the editorial fraternity.

In the last report of the American Pomological Society, this egotism is carried so far as to appear in the shape of *foot notes* to several pages, wherein he asserts and re-asserts in the most positive manner, the comparative ignorance of the editors of all our Agricultural and Horticultural Journals, concerning fruits; and while not disposed to allow them either the credit or benefit derived from a possible practical experience in fruit culture, he actually intimates that they are responsible for most of the errors in pomological nomenclature, and are *ignoramuses in general.*

Only one person with "long years of experience," the great "I am," "Secretary of American Pomological Society," is supposed to have a correct knowledge of pomology, and all are expected to play second fiddle to this noble functionary.

We are supremely disgusted, doubtless the public are too, with these airs of assumption. These *foot notes* we will collate and reproduce in our next number.

By this abuse of the liberty of his position (for none of the other executive officers saw or knew of these notes till the reports were all printed and ready for distribution), the Secretary has not only arrayed himself in the most direct antagonism to the press of the country, but has thrown to them an *insult*, which every high-minded journalist will resent.

We say to the American Pomological Society, this is disastrous to you. Your officers should be in perfect harmony with the press. You should seek its co-operation. It is your most efficient ally; insult or despise them, and your own influence and success will wane.

Take a *new departure;* let your future Secretary be one whom all will delight to honor, and toward whom the press will cheerfully offer every assistance, and who will co-operate in helping your Society toward still greater success and reputation.

Our thoughts for a long time past have often turned toward one who we believe would receive the unanimous support of the horticultural world; others have lately mentioned the same name to us, and we now break the long-kept silence we have maintained for the past four years, by proposing the nomination for the next Secretaryship in the well known name of Hon. W. C. Flagg, of Illinois, Horticultural Editor of *The Prarie Farmer. Who seconds?*

Death of J. S. Downer.

The death of Mr. Downer, of Fairview, Kentucky, came to us with startling suddenness. We had enjoyed the pleasure of frequent correspondence with him during years past, both often, and in the most agreeable familiar manner, that we felt an apostle of horticulture had verily gone, when we heard he was no more.

Mr. Downer's life was eminently successful, both in horticultural endeavors, and as a private citizen; one of that band of old pomologists who have done so much good for the world, without thought of great compensation. He was one we were always glad to meet, and upon whom everybody took delight in bestowing honor and appreciation.

Truly his days were full of wisdom, and his paths those of peace.

Remarkable Growth of Plants in California.

Think of a fig tree set out when 6 inches high, and two years afterwards measuring 12 feet high, with a head 7 feet across, and trunk 9½ inches in circumference. Yet this is vouched for by a correspondent of the *Rural Home.*

And now comes another bigger story: A California gardener has in his garden two plants of the Ricinus, planted 13th of May, and grown in one season to 17 feet. One of them had six stalks, each 11 feet high, and all 12 feet across, the trunk measuring 13½ inches in circumference, and bearing 16 spikes of seeds, each 12 to 28 inches in length. The whole appearance of the plant is described as very showy and highly ornamental. The stalks and stems are a blood-red, the spikes a most brilliant scarlet, and the broad magnificent foliage, a beautiful metallic green, made altogether a very attractive appearance.

The Tallest Trees.

Recent discoveries near Victoria, Australia, seem to indicate that the Eucalyptus is the tallest tree on the Globe. Several there growing were measured, and found to exceed 450 feet in height, and over 40 feet in circumference.

Young's Weeping Birch.

A new variety with this name has been originated in England, and is said to be very distinct from the standard variety, and much more valuable. The ordinary Weeping Birch has an erect habit, although its branchlets are pendent; but this new variety partakes more of the character of the Weeping Birch or Weeping Mountain Elm.

A Weeping Poplar.

A new Weeping Poplar has been accidentally discovered upon the grounds of a suburban English estate. It is pendulous to the utmost twig, a distinct looping tree 49 feet high, leaf smaller than the *Populus Tremula Pendula.*

The Proper Time to Prune Trees.

In a recent visit to the East Pennsylvania Experimental Farm, among other experiments, we were shown one where limbs on an apple tree of considerable size had been sawed off at different months of the year, with the view to demonstrate the comparative healing of the stump. The edges of the wound were found to heal most thoroughly and quickly where the pruning had been done in the sixth month, (June). This corresponds with sound theory, as the tree is then in its greater vigor, and the sap circulation most active.—*Practical Farmer.*

Next Meeting, American Pomological Society.

Western Horticulturists are already discussing the place for holding the meeting of the American Pomological Society in 1875, and Chicago is unanimously commended as the most fitting place. We approve the choice.

The Beatrice Peach.

A Maryland cultivator says that the peach growers of the United States are particularly indebted to Thomas Rivers, for his success in producing an early variety that is intrinsically good.

In the Beatrice we have the result of his hybridizing his very superior Early Silver Peach, with the new White Nectarine, and it is all that the grower can desire in an early Peach, being, though rather small, of beautiful color, agreeable flavor, and a sound, healthy bearer, and possesses remarkable keeping qualities, ripening, whether with Mr. Rivers, under glass, or in this country, where it has been cultivated, fully two weeks earlier than Hale's Early, which has been hitherto regarded as the earliest Peach. He has two other varieties that are second only to the Beatrice, the Early Louise and Early Rivers, both of fine quality, and in ripening follow the Beatrice in the order in which they are named; and both are earlier than Troth's Early, which is usually cultivated as the best early variety. These new varieties of Mr. Rivers' have been imported by some of our enterprising peach-growers, and will furnish the lover of this delicious fruit an opportunity to gratify their taste much earlier in the season than they could have done but for the skill and enterprise of this intelligent orchardist of England.

Successful.

The public may not be generally aware of the success of the new paper, *Ladies' Floral Cabinet*. In six months time it had reached a paying circulation, and now (only one and a half years old) has a larger subscription list than any horticultural journal ever gained in history, 17,000 copies of January number being printed to fill orders. It is still growing very rapidly.

Blood-Leaved Peach.

The *Gardener's Monthly* illustrates and describes this new peach with ornamental foliage. An account is given of its origin worthy of the days of Mythology. "The variety was found on the battle field of Fort Donelson, in Kentucky, and the Southern papers tell that a Southern general, wounded to death, sucked the juice of a peach, and threw the stone into the little pool of his blood by the side of him, from which sprang this tree with blood-like leaves." Mr. Berckmans, in the *Rural Carolinian*, thus describes it. "In the early portion of the year, its foliage is of a deep blood-red color, but gradually fades as the weather becomes warmer, when it assumes a dull green appearance. Fruit medium, slightly oblong, somewhat flattened; skin white, with a pale red wart, and a few pale red spots or stripes; flesh white, juicy, well-flavored; clingstone; ripens beginning to middle of August. We would class it as very good in flavor, but deficient in size." The *Gardener's Monthly* says it ripens in Philadelphia the last of September, and that when making second growth in August, the leaves are nearly as brilliant as in spring. This may prove an acquisition for the lawn.

Van Buren's Golden Dwarf Peach.

A few years ago, quite a sensation was excited in the horticultural world by the introduction of the above peach. The interest did not attach to the *fruit* so much as to the *tree*, as on account of its dwarf habit, it was said that it could be easily protected from the severity of the winter. We believe that it amounted to but little, practically, and that no one made a fortune by raising fruit of that variety.

We have just tested a specimen—the first we ever saw, and find it quite a large, oblong peach, shaped and pointed like the Crawford's Early; of a dull yellowish color; flesh deep yellow; rather insipid; ripe the middle of October. It is a cling, and would be hardly tolerable, if ripening earlier in the season when good peaches abound.—*American Rural Home.*

Winter Pears.

The subject of *Winter Pears* we think will bear much fuller discussions in our horticultural meetings than it has done. We are not perfectly satisfied that the *ne plus ultra* has yet been discovered, although we have now some most admirable sorts. The *Beurre d'Anjou* seems to us to have one fault, it is not *productive enough*. Wherever we go we make close inquiries, and find one general remark, "it does not come up to expectations." In all else it is fine, and brings high prices. The Lawrence is best yet of all late sorts, but it is long in coming into bearing. The Mount Vernon is desirable, but we do not know enough about its bearing qualities. Even the Beurre Bosc is a better bearer than the d'Anjou, and yet it is not late enough. The *Winter Nelis* does not grow everywhere. The Josephine de Malines, and the Doyenne d'Alencon, we believe are much superior. A recent article by John J. Thomas, in the *Country Gentleman*, gives some hints about their varieties.

Very much depends on the manner in which these fruits are kept, and the fitness of the apartments for storing them. Keep the specimens in as cool a place as possible after they are gathered, and before they are placed in the cellar. A cool out-house, or a suitable apartment in a carriage house, fronting the north, answers a good purpose. A fruit room built above ground on purpose, is best where there are large quantities to be stored; or in the absence of this building, an apartment may be divided off by double boarding in some other building, and covering the boxes in which the fruit is packed with chaff or fine straw. This protection will often be sufficient until the time has far advanced into December; and there will be no danger till intensely cold weather sets in, and it will be some days before the frost can pass the barrier of double partitions and the thick stratum of chaff. After they go to the cellar, keep the apartment well ventilated and regulated to a low temperature above freezing by a thermometer.

We have mentioned the Anjou as the best early winter pear. If kept in a warm apartment, it will ripen in autumn, even as early as the first of October; but by keeping cool, according to the mode just mentioned, they may be had even as late as the first of the year. There will be some variation in different seasons. We have known the Winter Nelis to ripen fully in November, when the autumn had been warm, but the period was retarded some weeks by keeping the pears in a cool place.

After the Anjou, Winter Nelis and Lawrence, the Josephine de Malines is the best, ripening in January, and keeping till February. Doyenne d'Alencon ripens about the same time, but is not quite so good in quality. It is, however, a hardy tree and good bearer, and is on the whole a desirable sort. The Easter Beurre, when it matures well, will keep into April, and ripen into a delicious fruit, but on the whole it is rather an uncertain sort. Josephine de Malines is poor in some places, but is mostly delicious and excellent. It grows well on quince.

We should not omit the name of the Vicar of Winkfield as an early or mid-winter pear of value. It is a free grower and a prodigious bearer—the fruit large and fair. It is occassionally, when well grown and ripened, of good quality for the table, being pleasant and agreeable, although not rich; but its chief value is for baking and stewing. The principal reason why the fruit is so often poor is that it is allowed to overbear.

Carbolic Soap for Insects.

Mr. Fuller has also experimented a little with this article in killing insects upon greenhouse plants, particularly the green fly (Aphis), which, as everybody knows, is a great pest, and one not readily destroyed, except by fumigating with tobacco—not a very agreeable operation to perform upon parlor plants or in a conservatory attached to a dwelling. My first experiment with this soap was a decided success, operating upon two hundred roses just in bloom, and it was conducted as follows: Into a pail of warm water I put a lump of soap the size of a small hen's egg. The soap was cut up into small pieces and the water agitated until it was all dissolved, forming a warm suds. The water should not be too hot, but if not above 120° or

thereabout, it will do no harm. Into this suds each rosebush was plunged (holding the pot inverted in the hand and kept there about a half minute). After plunging, the plants were set aside for a few minutes, then dipped in the same way into clean water, shaking them about thoroughly, washing the leaves, and then returned to their former place in the house. Whether it was the soap or warm water that killed the green fly I will not say, but there is one thing certain, they are all dead.

The Best Roses.

A few months since, a circular was addressed to the principal nurserymen and florists of Rochester, N. Y., by the editors of the *American Rural Home*, asking for the names of a dozen of the best hardy roses, easily grown, free blooming, and representing as far as possible the different colors, shades, tints and merits. The list was responded to by seven parties, and the votes appeared in the following order of popularity:

Gen. Washington has the suffrages of all	7
Caroline de Sansal	6
La Reine	5
John Hopper	4
Victor Verdier	4
Gen. Jacqueminot	4
Baronne Prevost	4
Anne de Diesbach	3
Madame Alfred de Rougemont	3
Triomphe de l'Exposition	3
Sydonie	3
Madame Victor Verdier	3
Madame Plantier	3
Perpetual White	3
	14

A brief description of each variety is also given by same journal.

General Washington.—Brilliant rosy carmine, approaching to scarlet; very large and fine form; free bloomer.

Caroline de Sansal.—Clear delicate flesh color, becoming blush; large and full.

La Reine.—Brilliant glossy rose color; very large; cupped and beautiful.

John Hopper.—Deep rose, with crimson center; very large and fine form.

Victor Verdier.—Clear rose, globular, fine form, free bloomer.

General Jacqueminot.—Rich fiery crimson; abundant bloomer. One of the best for bouquets, but casts its petals too soon for a garden bloomer.

Baronne Prevost.—Deep Rose, very large and fine; free bloomer; vigorous grower.

Anne de Diesbach.—Bright rosy carmine; beautiful form; very large and double.

Madame Alfred de Rougemont.—Pure white; large and very double; profuse bloomer.

Triomphe de l'Exposition.—Rich deep red, shaded with crimson; flowers in large clusters.

Sydonie.—Light pink; very large and full; fine in autumn.

Perpetual White.—Pure white; blooms in clusters.

All but the last of these are Hybrid Perpetuals, a class blooming at intervals, from June to November. The last is a Perpetual Moss, a class that is also hardy, blooming at intervals through the season. Those who wish to add to this list another Perpetual Moss, will find Salet a good one. Those who wish *climbers*, will find Baltimore Belle and Queen of the Prairies, the best of the class. And those wishing a yellow rose, will find Persian Yellow the best of that class.

Hydrangea Deutzæfolia.—New Hardy Shrub.

This plant appears to be perfectly hardy, as we had several plants out last year that were entirely uncovered, and which wintered perfectly, not even a tip was killed. It has just opened its showy flowers, which are pure white, but, like others of the same family, afterwards change to a pink. The flowers are very persistent, staying on often from August to October. Its native country is Japan, from which it was introduced to this country in 1865.

It is of somewhat spreading growth, often two or three feet over, and not more than a foot high. The flowers are borne in panicles, six inches wide, but mostly longer than wide.

It roots very readily from layers; when once it becomes reasonably well known (if it should prove so entirely hardy), it will ultimately be met with as commonly as the lilac.

The old golden Hydrangea (hortensis) will not stand our winters, although we have seen it do so in the neighborhood of New York.—*Edgar Sanders, in Prairie Farmer.*

Horticultural Notes.

The Para Squash.

This is one of the latest and most important additions to our list of winter squashes, and we extract a few remarks concerning it from an article of a correspondent of the *American Rural Home:*

It is a native of South America, taking its name from the Para river, a large river situated in the northern part of Brazil. It is a vigorous grower, its habit resembling the bush squashes in some respects, although the longer vines attain a length of six or eight feet. The vines are very thick and strong, branching like a bush squash, and growing erect till they reach a height of two and one-half or three feet. One vine which grew alone in my garden measured nearly two inches in diameter, just above the surface of the ground. The leaves are smoother than the Hubbard, and of a lighter color.

The squashes, which are about one foot in length, are of a light green color while growing, gradually changing to a dark bottle green when ripe, some specimens having a little yellow on the under side; ribbed, skin smooth and thin, and can easily be cut with a knife. The flesh is fine-grained, and when cooked is sweeter, and not as dry as the Hubbard, and of a peculiarly agreeable flavor. It is equally good, either baked or boiled. They are good keepers, and are very productive. I counted upon one vine five squashes within a distance of three feet of each other.

Although a native of the torrid zone, and coming from nearly under the equator, they have ripened here perfectly the past season, notwithstanding the fact that we have had a hard frost that killed vines of all kinds much earlier than usual. On the whole, I think it should be classed as one of our very best squashes, being of very good quality, a good keeper, very productive, and excellent in every respect, being worthy of a place in every kitchen garden.

Summer Pruning Small Fruits.

The Vermont *Farmer*, in an article urging the necessity of attending to this important operation, says:

Summer pruning does away with the necessity of staking and tying raspberries and blackberries. It does more than this: it increases the amount of fruit, makes it of a better size and flavor, and gives the canes a form and degree of hardness which enable them better to resist the severity of Northern winters. Without summer pruning, these small fruits cannot be grown with profit or with any degree of certainty of yield. A plantation neglected in this particular would soon run out.

The Black cap raspberry should be checked in its upward growth when about two or two and a half feet high. The work may either be done by pinching or cutting. If the patch be large, a convenient method is to clip the tops of the young canes with a common corn knife, and the work can be done about as fast as a man can walk along the rows. The upward growth being thus checked, the side branches start out vigorously, and push out long and assume a drooping form. A new upward growth will not usually begin again, but in case it should, the cutting or pinching must be repeated. We should not check the growth of the side branches, unless they interfere with cultivation the first season, but shorten them early in the spring of their bearing year.

The Antwerps and their class should also be summer-pruned when the shoots are about the same hight. It is an object to promote the growth of side branches, as on these most of the fruit will be born. Thus shortened, the canes become stiff enough to support themselves in an upright position without the use of stakes.

Blackberries must be shortened in as above described, if the grower gets any profit or comfort in trying to produce this fruit. It produces the same effect as on the raspberries, viz: causing the side shoots to grow with vigor, and these must be severally shortened next spring. With this management, staking may be entirely dispensed with, as indeed, it is in plantations where these fruits are cultivated on a large scale for market.

Too many new canes should not be allowed to grow in a hill. Three or four of the Black caps are sufficient; four or five of the Antwerps and this class, and two or three of blackberries. If more appear they should be cut away.

Cultivation of Nut Trees.

Little attention has thus far been given, says the *Oneida Circular*, in this country, to the cultivation of nut bearing trees. It is, however, said by some, that the yield of nut orchards in nuts and lumber would pay a good percentage on the capital invested in them, especially if the trees were planted on rough, hilly land, suitable for meadow and the production of crops requiring much hand culture.

For the purpose of showing that those who may engage in the enterprise will not necessarily have to wait a lifetime in order to see the fruits of their labor, I will state a few facts in regard to an experiment on a small scale. Eighteen years ago, one dozen trees each of the hickory nut and the black walnut of moderate size were obtained from a nursery. The trees were mostly set out by the roadside, in rather a hard, gravelly soil. They received no culture, and for a year or two success seemed doubtful. However, all but one survived, and finally became established. The hickory trees have grown nuts for the past two years. One tree, a year ago, produced three and a half barrels of nuts, as they came from the tree. The trunks of some of these trees measure one foot in diameter near the ground.

About the same time that these trees were set out, some chestnuts were planted in the seed bed. From these, trees have been produced that have borne nuts the past two years, making about sixteen years from the seed to the bearing state. But it is by no means necessary to wait even this length of time for results; trees can now be obtained at the nurseries by the thousand, of suitable size for planting. These, if the work has not already been done, may be grafted, taking cions from bearing trees that are known to produce the largest and finest nuts. This process would considerably shorten the time before bearing, also secure the all-important end of producing the most valuable nuts.

Now as to the market value of nuts:—It is known that the price of edible nuts has steadily increased as they became more and more scarce, until at the present time our native chestnuts sometimes bring in the market the sum of ten and twelve dollars a bushel; hickory nuts, four dollars; while Spanish chestnuts, I am told, are worth from fifteen to eighteen dollars a bushel. The latter variety may also be

grafted on our native stock if desirable. It is not as hardy as our native chestnut, and would require the advantage of more favored localities.

Choosing Dwarf Pears.

In choosing Dwarf Pears, select those that have been budded close to the ground, as when they are replanted, the stocks should be burried an inch below the pear scion, which prevents the attacks of the quince borer. If a long stem has to be buried, the usual consequences of deep planting result, and do as much injury as the quince borer. Also in choosing, select, if possible, plants that have been raised from cuttings, for layered stocks have always a long deep tap-looking root, on which dwarf pears do not do well. If we have to use such dwarf pear trees, better shorten some of the long trunk root before planting. Never plant what appears to be the stem of a tree far beneath the surface, under any circumstances, for disease will be most probably an ultimate consequence.—*Gardener's Monthly.*

Raising Fruit in the Shade.

A writer in the *Fruit Recorder*, contributes the results of experiments in raising fruits in the shade:

A parishioner objected to planting raspberries because he had no place for them except the north side of his barn.

In 1863, I planted two rows of raspberries about sixty feet long, and three feet apart, in the rows directly west from a two-story building, and under the north side of a tight board fence, so that they got no sun till afternoon, and not more than two or three hours of any day; and from that plantation we have picked two bushels in a season of Red Antwerps and Brinckle's Orange, that were the admiration of our neighbors.

The finest Black-caps I ever raised, were directly under the north side of a high barn.

I have raised a full crop of strawberries—Russell's, in the same location, and thus lengthened out the strawberry season, as they ripened a week latter than those that had the full benefit of the sun.

Successful Culture of Strawberries.

In response to a question from an anxious small fruit grower how to manage his strawberries, the *Western Rural* gives him this byway, as a table of commandments:

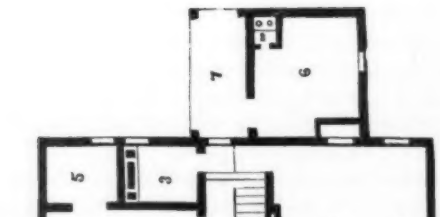
Set out in the spring good strong plants, upon deeply plowed, and if possible, new land, in rows three feet apart by twelve inches in the row. Keep the ground thoroughly clean, and the runners cut off as fast as they appear during the season. Do not allow them to bear the first season, since the crop will not pay you, and it will weaken the plants. Pinch off the blossoms as they appear.

About the time the ground freezes up, cover the bed about three inches thick with slough hay, or some other clean material. When the vines really show signs of growth, *not before*, uncover the plants along the rows, allowing the mulch to remain between the rows, until after they have fruited.

Having done as above, you should get a full crop of the finest berries. The mulch not only keeps the soil moist, and the berries from contact with the earth, but its principal value in the spring, besides protecting the plants in winter, is to keep back growth early in the season, thereby retarding the blossoming until danger of frosts are over.

Many persons imagine that it is better to let the runners grow, but with some varieties this will be the case to such a degree, as to prevent their fruiting, and such vines are always non-paying. It really costs less to clean and pick the crops under the hill system, than under the old fashioned one of letting them run.

PLAN OF COUNTRY COTTAGE.



PLAN OF FIRST FLOOR.